

SAULT COLLEGE

Course Title : RESEARCH PROJECT/REPORT

Code No.. : ELR 303/311

Program : ELECTRICAL/ELECTRONIC TECHNOLOGY

Semester : 5/6

Date : SEPTEMBER, 1985

Author : R. PALO

New: _____ Revision: X

APPROVED:

CHAIRMAN

R. L. Peatman
L. P. Crockett

DATE

85-12-10

PHILOSOPHY/GOALS:

This course is designed to apply the student's organizational, technical, mathematical and report writing skills to a program related electrical/electronic design project. The subject of the project/report is selected between each student and his/her advisor.

GRADING:

BREAKDOWN Daily Log Book - 50%
Final Research Report - 50%

Note The daily log book is mandatory and is to be reviewed periodically for evidence of progress, completeness, organization and neatness.

FINAL MARKS

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|------|-----------|
| A -- | 80 - 100% |
| B -- | 66 - 79% |
| C -- | 55 - 65% |
| R -- | REPEAT |

TEXT: NONE

Course Outline

Electrical students may select from any one of the following topics or one of their own provided it is electrical/power related. Only one student is allowed per topic. The choice must be made early in the fifth semester.

PROPOSED ELECTRICAL RESEARCH TOPICS

1. A current sourced inverter 5 - 150Hz.
2. A 3-phase inverter for a 3-phase 230v 3hp SCIM using PWM and GTO's.
3. A wound rotor slip power recovery speed control system.
4. A static VAR compensation system.
5. Torque-speed data acquisition and recording system for AC and/or DC machines test facility.
6. An induction furnace.

7. A microprocessor controlled stepper motor translator (chopper based).
8. A microprocessor based automatic synchronization for paralleling an alternator to the school bus.
9. A microprocessor based control for a bridge crane.
10. A 4 quadrant chopper control of a DC motor.
11. A variable voltage and frequency power source (wind turbine) to a constant voltage, constant frequency single phase output converter.

SPECIFIC OBJECTIVES

- 1) Daily log book - must be kept and shall contain the following:

Abstract - A one page synopsis of the proposed project and intended method of dealing with the subject

Proposed Schedule - A list of target dates of completion of design, requisition, fabrication, test and report stages

Design/Selection - Complete engineering design/selection notes including calculations, sketches, schematics, specifications, assembly and test procedures. All sources in the design/selection process must be documented.

Fabrication/Test - All setups, data, graphical recordings and photos must be included as well as an account of the problems encountered.
REMEMBER: The daily log is your diary.

- 2) A type-written technical project report
culminates the technologists program. It is expected to be logical, factual, grammatically correct and demonstrate the application of an engineering principle/problem solving approach. The report should contain reference to current technical literature with regard to theory, procedures and tests. Suitable illustrations, photographs, diagrams and tables should be included. The report should be on 8 1/2" x 11" paper, double spaced and properly bound. The report should be organized as follows;
 - a) Title page and declaration of authorship
 - b) Table of contents

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- e) The main body of the report with design, fabrication, test and final conclusion sections.
 - f) Appendices to include any supporting data such as equipment specifications used in design
 - g) Bibliography